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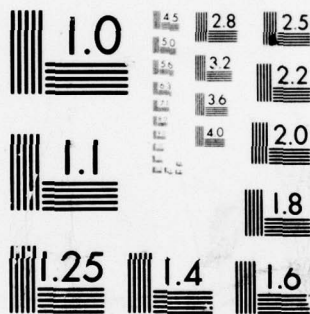
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November 1979

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MOBILIZATION ENVIRONMENTS

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Prepared by
US Army Engineer Studies Center
Corps of Engineers

November 1979

Principal Author: Mr. James H. Tate

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ABSTRACT

This monograph provides a qualitative background for Corps of Engineers (CE) planners who must develop plans at all CE levels for national mobilization. It discusses CE responsibility for mobilization support as specified in various orders and regulations to provide planners a guide to the scope of their planning. Three levels of mobilization are considered: full, total (conventional), and total (nuclear). The characteristics of these mobilization conditions are described along with the general support tasks that the CE would have to take in support of the military and nation. Of the mobilization conditions, full mobilization appears to be the most immediate and demanding for which CE planners should prepare. Because the overall planning for full mobilization is being reviewed, CE planners will have to monitor developments closely and ensure that plans reflect the latest requirements.

MOBILIZATION ENVIRONMENTS

I. INTRODUCTION

1. Purpose. This monograph describes the probable environments and tasks for defense mobilization from 1980-1990. The purpose is to set the stage so that all Corps of Engineers (CE) agencies have a common understanding from which to view and act on the question: "How might the CE be better positioned to support defense mobilization in the 1980s?" To act on that question, CE planners at all levels must develop an integrated body of plans that permits immediate CE-wide response to mobilization orders. Therefore, this monograph develops a situation background to assist planners in focusing their thinking on the subject of mobilization. This is essential since it is important to involve CE field organizations in developing the planning and programs they will have to implement. A second monograph will quantify, insofar as possible, CE mobilization workload and resources, develop a planning framework within which CE planners can concentrate their planning efforts, and indicate possible cross-training needs. A final report will set forth the study conclusions and recommend actions and initiatives the CE should take to enhance CE responsiveness to military and national mobilization needs.

2. Scope. This monograph establishes the study background and the change in conditions that would occur with the declaration of mobilization. Further, the monograph addresses in general terms the CE's authority in executing mobilization tasks. However, the primary role of the monograph is provided in a discussion of the individual mobilization conditions.

3. Background.

a. Mobilization is a primary Army mission as specified in the National Security Act of 1947.^{1/} Additionally, Sections 672 and 673, Title 10, United States Code,^{2/} authorize the President (under certain conditions) and Congress to order the mobilization of all or part of the reserve components to augment the active armed forces. Consistent with this and in light of previous experience, there is a perceived need within the Department of Defense (DOD) and Congress to rethink mobilization doctrine, policy, and planning. The Chief of Staff of the Army has recently instructed his senior generals to become fully conversant with the broad spectrum of current mobilization inadequacies within their areas of responsibilities and directed the formulation of appropriate corrective actions. This renewed emphasis on mobilization will be pervasive throughout the Army and will receive command emphasis at all levels. The organization and doctrine which governed mobilization efforts in World War II and the Korean Conflict may be inadequate in the future because the technological improvements of potential adversaries and other factors have significantly reduced response time available to assure national survival. The CE is particularly involved because it is the primary engineer organization to which the nation turns during times of emergency. The CE has an excellent record showing its ability to shift its work effort from peacetime flood control and water resource engineering to national emergency construction priorities. In fact, some portion of the CE's

^{1/} Congress of the US, Eighth Congress, National Security Act of 1947 (With Amendments). (UNCLASSIFIED).

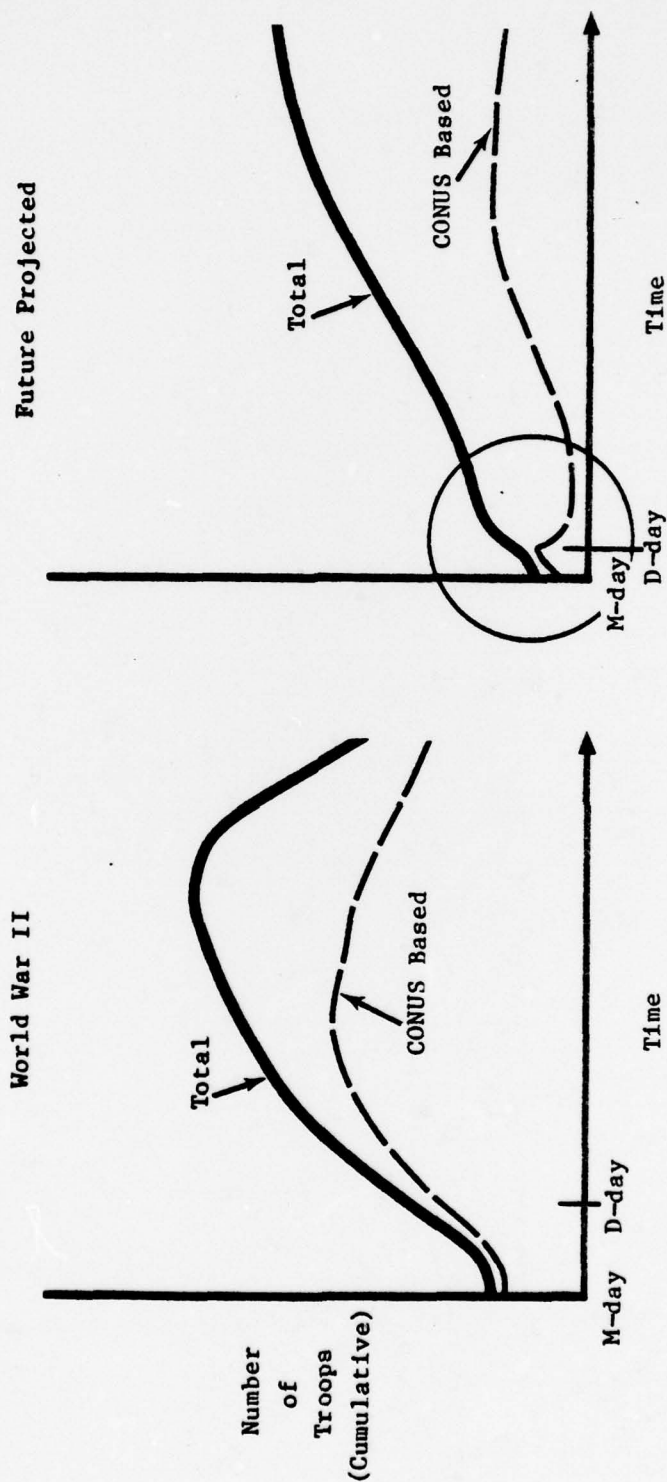
^{2/} Congress of the US, Title 10, United States Code, Sections 672 and 673. (UNCLASSIFIED).

decentralized structure is responding to a natural or manmade disaster somewhere in the US or its trust territories almost continuously. One might assert that the doctrine, organization, and national policy are wholly adequate for future mobilizations given the mobilization history of World War II and current demonstrations of capabilities in response to hurricanes, floods, and other disasters. Such a confident declaration would be unwarranted, since the size and character of the potential mobilization problem are significantly different from that experienced in World War II. Figure 1 shows some of these differences. However, future conflicts will be different from what the US experienced in World War II. During World War II, the US accomplished construction of troop facilities and production base facilities over a relatively long period of time and within a protected CONUS base. Future conflicts will probably require a much more rapid buildup and, possibly, the CONUS base would be subject to immediate enemy attack. The buildup period could be as short as 1 week. Hence, our doctrine and policies, founded on our past experience, may be inadequate and it is necessary to better project future conditions.

b. Emergency capabilities and response.

(1) The CE's emergency capabilities are currently responsive within a wide spectrum of conditions. Figure 2 is a matrix outlining the breadth of conditions in which the CE is performing its emergency missions and points out its broad spectrum of emergency response responsibilities. The CE's emergency capabilities are primarily postured and sized for natural disasters or small man-created disasters (e.g., slag dam collapses and nuclear power plant accidents), but, the question must be asked: Is this adequate for mobilization?

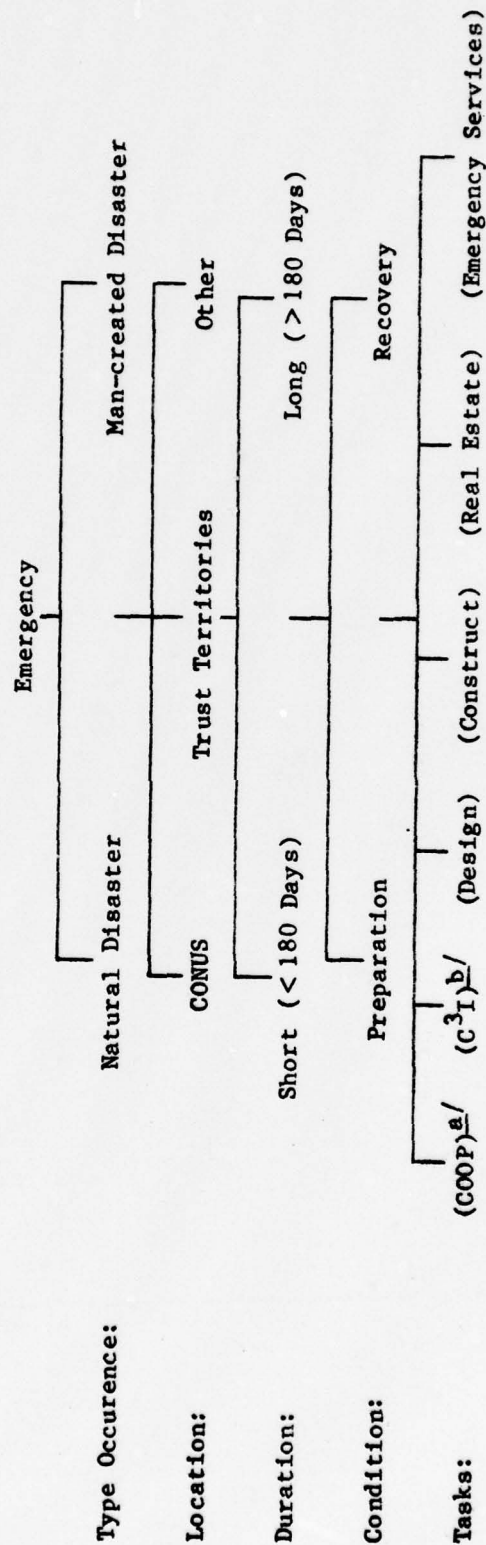
US TROOP POPULATION VERSUS TIME^{a/}



^{a/} Circled for emphasis are two significant differences: 1--reduced reaction time between mobilization day and commencement of hostilities; and 2--the critical early increase through rapid deployment of reserve forces from CONUS.

Figure 1

CORPS EMERGENCY RESPONSE SPECTRUM



- a/ Continuity of Operations Plan.
- b/ Command, control, communications, and intelligence.

Figure 2

(2) Defense mobilization cannot be represented by a single scenario since it involves a spectrum of emergency conditions and responses. Figure 3 shows these in a matrix that parallels that for CE emergency response. In comparing Figures 2 and 3, CE tasks appear functionally the same for mobilization and natural disaster. However, the character and magnitude of the work can be expected to be significantly different. For example, consider the following discussion:

One of the 108 scenario paths through the matrix in Figure 3 is Conventional-NATO-Short War-Full Mobilization-Accelerated Implementation. Place yourself in the position of a District Engineer who has just been notified of a national mobilization condition. An attack on NATO is imminent. The reserves have been called and active duty forces have been alerted for immediate deployment. Within the District there will be an expected combined influx of 100,000 military personnel at mobilization bases over the next 2 weeks. Additional billets and training facilities are required. Three defense plants in the District are involved in production base expansion. The President has ordered that critical defense installations be protected from sabotage and that civil populations be alerted for possible evacuation from high-risk areas within CONUS. National priorities are shifted so that national defense and survival are paramount. For command and control, CE Districts may have to respond to other MACOMs or installation commands. What are the District's tasks? What projects do you stop doing and which do you start? Can the District's organizational elements shift work direction with sufficient speed to successfully meet the needs of rapid national mobilization?

In World War II time was available to make the necessary adjustments. In a 9-month period in 1942, CE civil construction went from a \$5 billion program of building locks and dams to a \$200 million maintenance level with only modest construction efforts. In contrast, military construction went from \$200 million in facility repair to \$10 billion in defense facility expansion, including the start of the Manhattan Project. The point of this discussion is merely to emphasize that M-day interjects a complete operational discontinuity for the CE, not just a partial discontinuity as experienced in most natural

	Conflict	
Type Occurrence:	Nuclear War	Conventional War
Location:	CONUS	NATO Non-NATO
Duration:	Short (< 180 days)	Long (> 180 days)
Mobilization Condition:	Partial	Full Total
Response Time:	Deliberate (months)	Accelerated (weeks) Immediate (days)
Defense Task:	Force Deployment	Force Expansion Force Movement
Defense Subtask:	(Structure) (Train) (Equip) (Man) (C ³) (Station) (Protect) (Transportation)	
Corps Task:	(COOP) (C ³ I) (Design) (Construct) (Real Estate) (Emergency Service)	

Figure 3

disasters. Additionally, the time available for the mobilization transition will be measured in days and weeks, not months and years as in World War II.

c. Response time is the critical attribute in assessing the CE's capability to mobilize. To be of use to defense, the CE's peacetime missions and functions, like Civil Works (CW), must be quickly convertible to war preparation, execution, and recovery. If warning for a future war is now measured in weeks, the CE response in mobilization must be substantial and visible in days.

d. In recognition of the foregoing factors and criticality of the CE in mobilization, the Chief of Engineers (COE) has repeatedly stated that the CE's primary goals are to support the Army at all levels and the nation in a mobilization situation. The coordinated efforts of the engineer family are required to accomplish these goals. Of particular concern in the event of national mobilization is how the CE's CONUS personnel working in such areas as CW, real estate, and various engineer laboratories can be redirected to assist the Army's CONUS structure and facilities and support other areas of the national structure. The CE has indicated consistently that support capability is available, but that capability has not been identified and quantified clearly to provide a detailed assessment. There is a need for quantification, where it is feasible, that will lead to matching wartime requirements and wartime capabilities. Ultimately, there is a need to have a CE planning and analytical framework to assess mobilization preparedness in detail.

4. Mobilization Conditions. Figure 3 shows 108 possible combinations of mobilization conditions. Only three scenarios will be used for CE mission and organizational evaluation--conventional, NATO, short war, full, accelerated;

conventional, NATO + non-NATO, long war, total, accelerated; and nuclear, CONUS, long war, total, and immediate. The NATO short war is believed to be the most likely scenario. Corps mobilization posturing should be configured primarily for this scenario. However, provisions for the total spectrum, particularly a long war or a nuclear war, must be taken into account.

a. Definitions. JCS Publication 21^{3/} defines full mobilization as the:

Expansion of the active armed forces resulting from action by Congress and the President to mobilize all Reserve Component units in the existing approved force structure, all individual reservists and the materiel resources needed for their support.

and total mobilization is defined as the:

Expansion of the active armed forces by the organization and/or generation of additional units or personnel beyond the existing approved active and reserve structures to respond to the requirement generated by the contingency, including mobilization of all national resources needed to create and sustain such forces.

Under both mobilization conditions, it is implied that the US will use the Selective Service to meet service needs for fillers, replacements, and, in total mobilization, additional units. Initially, the Selective Service System was charged with providing the first inductees by M+30; 100,000 inductees by M+60; and 650,000 by M+180. Within recent months, these goals have been increased to 133,000 by M+30 and 900,000 by M+180.

b. Implementation conditions.

(1) Full mobilization. For planning purposes, full mobilization conditions are required for simultaneous implementation of operations plans (OPLANs) for defending Europe and a holding action in the Middle East.

^{3/} DOD, JCS, JCS Pub 21, Mobilization Planning. (FOR OFFICIAL USE ONLY).

The European OPLAN is based on the need to meet a major Warsaw Pact (WP) conventional threat; a much smaller US force is envisioned for deployment to the Middle East. This full mobilization situation is one key on which to predicate CE planning since executing these OPLANs would result in the most demanding deployments within the capability of the approved force structure. Although this mobilization probably would be preceded by a period of increasing international tension giving advance warning, no mobilization action by CW can be taken until a state of national emergency is officially declared. Therefore, this analysis assumes no advance warning and CE planners should base their mobilization planning on that condition.

(2) Total mobilization (conventional). This mobilization level is unlikely to be declared initially. But, it probably will result after full mobilization is declared and the situation continues to deteriorate or as the prospects for a protracted war become apparent. Therefore, this study considers total mobilization (conventional) to begin at M+30 for full mobilization. CE planners should base their mobilization planning for this level on a transitional condition of moving from a full to total mobilization.

(3) Total mobilization (nuclear). This level of mobilization could occur with a sudden nuclear onslaught on CONUS or as an outgrowth of a deteriorating conventional conflict or international conditions. Obviously, the most demanding condition would be if such an attack occurred without warning. While such an event is possible, it is unlikely that there would be no warning whatsoever. Thus, for purposes of this study, planning for total mobilization (nuclear) should be predicated on a short-warning time of approximately 1 to 2 weeks. This permits at least initial efforts to be taken to

keep casualties down. At the same time, it appears prudent to consider the possibility of a no-warning attack. Therefore, CE planners should be prepared for both a short-warning situation and the worst case no-warning situation for this level of mobilization.

c. Time period. This study considers the initial 30 days of mobilization, except in total mobilization (nuclear), to be most critical in terms of CE workload. However, CE workload would continue throughout the mobilization period, and it is essential that CE planners consider a prolonged period of mobilization. Therefore, as a basis for planning, this analysis considers that full mobilization extends from the day mobilization is declared (M-day) to M+180; for the total mobilization (conventional) scenario, it considers the first 30 days (M-day to M+30) as full mobilization and from M+30 to M+180 as total mobilization. While total mobilization (conventional) implies a protracted conflict extending beyond M+180, the primary surge of CE workload would appear to take place within the first 180 days. Beyond that there still will be substantial demands for CE support, but precisely what the duration of those demands are cannot be determined. For total mobilization (nuclear), the situation is considerably different. With little or no warning and the country suffering major damage and casualties, the available CE work force in the initial period would be dedicated to basic national survival tasks. Generally, the period M-day to M+60 under total mobilization (nuclear) is considered the most critical and is the period used in this study for CE planning.

d. Changing conditions. When mobilization is declared and M-day is indicated, a series of national events are triggered that affect CE activities. These events include:

(1) Regulations set aside. With declaration of M-day, certain regulatory restraints on construction, contracting, training, and transportation are set aside to facilitate mobilization in the national interest. Environmental protection controls on certain emergency construction for military-related installations such as training facilities would have to be relaxed or set aside to permit rapid expansion of defense capabilities. In some cases current law permits this. For example, requirements for competitive bidding for vital construction and services can be set aside to permit immediate contractor response to military needs. Subsequent reports will assess in detail the impact of current laws, regulations, and standby legislation.

(2) Reduced support for natural disaster recovery. During mobilization, it will be necessary for the military, particularly the CE, to reduce its traditional support to civilian communities for recovery from natural disasters^{4/} to a level subordinate to national defense and national survival priorities. The reduction of support to recovery from such disasters would be particularly pronounced during the early phases of mobilization when the CE's defense workload would be the greatest. In fact, certain areas during early mobilization would probably have only very limited CE resources available for any disaster recovery work, and local communities would have to rely more heavily on their own resources and initiatives. In a total mobilization (nuclear) situation, all CE resources would be dedicated to the highest priority tasks for lifesaving designed to ensure maximum population survival. Second-priority tasks would be those needed for initial recovery.

^{4/} Natural disasters, in this context, include floods, hurricanes, tornadoes, and earthquakes.

(3) Military force expansion. Initially, in either full or total mobilization, armed forces manpower requirements will be met with reserve force activation. These forces will have to be supplemented almost immediately with the inductees. In full mobilization, inductees will be used to provide replacements and fillers for understrength units and, in total mobilization, to create additional units. This will place additional burdens on military bases, particularly training areas, that may require CE efforts to expand. Other changes in military and civilian force structure and disposition will also have an impact on the CE. These include:

(a) Reserve mobilization. All reserve forces in the existing force structure would be ordered to active duty in full and total mobilization. In a mobilization condition, each CE division and district has specific tables of distribution and allowances (TDAs) which provide for expanding certain organizational elements using preselected mobilization designee (MOBDES) reservists. The increase in division and district strength as a result of MOBDES slots may enhance organizational capability with regard to key disciplines. At the same time that divisions and districts gain MOBDES, civilian reservist employees from these organizations will be activated. These potential personnel losses will have to be accounted for in any assessment designed to identify aggregate capability under mobilization conditions.

(b) Withdrawal of overseas personnel. Tentatively, plans are to be developed for withdrawal of Middle East Division personnel--most of whom are civilians--from Saudi Arabia to CONUS when M-day is declared. (This assumes the necessary lift for such an evacuation is available.) This would

increase the number of CE personnel in CONUS to assist with mobilization tasks, but not during the initial phases of mobilization. Similarly, withdrawal of Europe Division civilian personnel could augment CE elements in CONUS. In a total mobilization (nuclear) situation, these augmentations from overseas should not be counted on for some time, if at all.

(c) Reorganization of Europe-based engineer elements.

Under the OPLAN used in the full mobilization scenario (and applicable to total mobilization (conventional)), the engineer elements in Europe are reorganized into two commands with the mobilization proclamation. It appears that some engineer officers, primarily from CE divisions and districts, will have to be sent to Europe to fully staff the new command structures. This will reduce the number of officers available in CONUS for mobilization.

(d) Expanding the work force. It will be necessary to expand the CE work force during certain mobilization situations. One significant approach would be to recruit from the local community. There is much talent in this country such as civilian employees retired from CE elements and retired military personnel who are not required for active duty. Civilian personnel regulations exist which allow rapid hiring of selected individuals under emergency conditions. These actions could be accomplished in a matter of a few days, thus allowing new personnel to be available in time to impact on very early CE requirements. In the case of retired military personnel, it would also be possible to activate selected individuals and then have them assigned to CE elements. This approach would be time-consuming and require much coordination to effect. A long-term buildup of the CE work force could

warrant taking this latter approach; however, direct civilian hire is considered to be the preferred method.

(4) Industrial base expansion. Under full and total (conventional) mobilization, there would be a surge mobilization requirement for ammunition and equipment. Production lines would have to be started up, converted, or accelerated. Inactive ammunition plants would have to be activated and brought into production. Peacetime production base planning addresses the identification of national production assets and provides for the essential plants to initiate mobilization production. But, CE planners should recognize the possibility of unforeseen requirements or shifts in priorities or emphasis generating the need to rapidly create new production facilities. This could mean increased CE responsibility for total construction management (planning, design, and construction). The expansion of the total industrial base cannot be quantified precisely. However, an order of magnitude level might be developed as an indication of required CE support.

e. Summary.

(1) The foregoing establishes a broad framework describing the mobilization conditions facing CE planners. There appears to be little difference in the early stages between full and total mobilization (conventional) as the defense establishment currently is structured. Both require the rapid, early-on mobilization and deployment of all reserve units and individuals. CE responsibility should focus primarily on assisting, and where possible, accelerating that callup and deployment. Where the two conventional mobilizations differ significantly is in the magnitude of subsequent civilian inductions, production base expansions, and time periods considered for the

conflict. Currently, there is some thinking within the defense area that the period M-day through M+180 would not be different for either mobilization level for two reasons. The Selective Service System has only limited capability to induct individuals during the first 6 months, and equipment lead-time constraints would restrain the rate of force growth for the first 18 to 24 months. However, planning, design, and the start of construction for training bases and possibly production base expansion should start in anticipation of oncoming growth if a decision is made early in a full mobilization to gear up to total mobilization.

(2) Total mobilization (nuclear) obviously is a completely different circumstance than either of the two conventional mobilizations. The focus here, at least initially, must be on national survival rather than expediting armed forces mobilization and deployment. The CE would have to be prepared to work with local authorities to restore the basic life support systems for survival. This probably will be the key function of the CE and all other government agencies from M-day to M+60 or longer. The magnitude of such a situation and the resulting dire national consequences are such that CE planners must focus their planning on those first 60 days.

5. CE Mobilization Authority.

a. General. Authority for CE activities in mobilization is embodied in Executive Orders (EOs), DOD Directives, Army Regulations (ARs), and Engineer Regulations (ERs). Figure 4 lists some of this documentation. There is not always a complete correlation between EOs, DOD Directives, and ARs since authority for certain functions may be interpreted or inferred from other documents such as enabling acts and laws passed by Congress. There is

SELECTED AUTHORITIES FOR DOD, ARMY, AND CE MOBILIZATION RESPONSIBILITIES

Number	Title or Subject	Date
<u>Executive Orders</u>		
10952 ^a /	Assigning Civil Defense Responsibilities to the Secretary of Defense and Others	22 Jul 61
11490 ^b /	Assigning Emergency Preparedness Functions to Federal Departments and Agencies	30 Sep 69
12127	Reorganization Plan No. 3 of 1978	31 Mar 79
12148	Federal Emergency Management	20 Jul 79
<u>DOD Directives</u>		
3005.2	Nonindustrial Facilities for Mobilization	7 Dec 64
3020.26	Continuity of Operations Policies and Planning	3 Jul 74
3020.35	Development, Use, Marking, and Stocking of Fallout Shelters	31 Jul 72
3025.10	Military Support of Civil Defense	29 Mar 65
4005.1	DOD Industrial Preparedness Production Planning	28 Jul 72
4165.6	Real Property Acquisition, Management, and Disposal	22 Dec 76
4165.20	Utilization and Retention of Real Property	29 Sep 58
4270.5	Public Works Construction Responsibilities	11 Jul 55
<u>Army Regulations</u>		
210-23	Master Planning for Army Installations Emergency Expansion Capability	23 Jan 76
415-11	Air Force Contract Construction	29 Mar 55
415-15	Military Construction, Army (MCA) Program Development	4 Dec 75
415-50	Basic Facilities and Space Criteria for Construction at US Installations in Event of Emergency	15 May 78

(Figure 4 Continued on Next Page)

SELECTED AUTHORITIES FOR DOD, ARMY, AND CE MOBILIZATION RESPONSIBILITIES--Continued

Number	Title or Subject	Date
<u>Army Regulations--Continued</u>		
500-3	Army Survival Measures	26 Jun 76
500-10	Nonindustrial Facilities for Mobilization	7 Nov 74
500-10-9	Allocations of Nonindustrial Facilities for Mobilization as of 30 Sep 78	12 Dec 78
500-70	Military Support of Civil Defense	12 Jul 74
700-9	Army Industrial Preparedness Program	4 Sep 75
<u>Engineer Regulations</u>		
500-2-1	National Emergency Procedures	12 Jan 78
None	OCE Continuity of Operations Plan	1 Jul 76
<u>a/</u> Revoked by EO 12148. <u>b/</u> As amended.		

Figure 4

no single document that details all of the functions for which the CE is responsible in any mobilization situation and there probably are actions which logically could fall to the CE that are not covered in any document. Thus, CE planners need to be cognizant of regulations that specify CE responses to mobilization situations and be aware that there may be voids which the CE should logically fill and plan accordingly for the corresponding tasks.

b. Full and total (conventional) mobilizations. CE responsibility in full and total (conventional) mobilizations is covered in a wide range of documentation, often as a subsection of a broader directive or regulation. Broadly speaking, major CE responsibilities are defined in numerous regulations and directives relating to installations, construction, emergency employment of resources, and logistics. The lack of any single document covering all CE responsibilities for conventional conflict is a handicap to planners who must be familiar with many regulations or rely on OCE guidance. This body of knowledge is generally maintained by Military Construction and not by CW agencies who must assume the majority of the mobilization workload. CE division and district planners should understand their role in conventional conflicts since CE tasks relate to expediting overall military mobilization efforts and expediting the function of the manpower and materiel pipeline and ensuring its continuous function.

c. Total mobilization (nuclear). Figure 4 shows that there is more specific documentation on tasks and authority in the areas of military support to Civil Defense (CD) and Army survival measures during total mobilization (nuclear) than for mobilization for conventional conflict. However, reassignments of responsibilities and realignments are in process with issuance of

EO 12148^{5/} which implements the Federal Emergency Management Agency (FEMA). FEMA has absorbed many smaller elements to create a single agency directly responsible to the President for management of national emergencies, including nuclear attack. The Defense Preparedness Agency (DCPA) was one of the agencies absorbed by FEMA. A number of EOs and DOD Directives establishing DCPA as part of DOD and assigning responsibilities have been superseded or amended by EO 12148. The Secretary of Defense and National Security Council have oversight responsibility concerning development of CD policies and programs by the Director of FEMA. Currently, a DOD-FEMA Interface Group is working on defining the specific missions and roles of both elements, but the work of this group may take some months. While this group may delineate responsibilities of the two organizations, there may still be much more definition and interpretation necessary to resolve them in terms of specific tasks that the CE should perform under a nuclear attack situation. This, then, appears to be an area in which CE planners will have to apply both logic and initiative, and where the development of the mobilization environments in this report can be most helpful.

^{5/} Exec Ofc of the President, EO 12148, Federal Emergency Management. (UNCLASSIFIED).

II. FULL MOBILIZATION

6. The Mobilization Process. Full mobilization is considered the most acute conventional mobilization situation. Full mobilization usually begins before total mobilization, but total mobilization requires a greater national resource commitment over time. Thus, the immediate requirements of full mobilization are very demanding and of major concern to military planners. One of the key factors to be stressed here is response time, for the reaction to a declaration of full mobilization must be measured in hours. Full mobilization provides for the immediate activation of reserve units and individuals but not for creating new units. It also requires the induction of civilians into the armed forces to provide fillers and replacements for existing units. However, new assessments of inductees required, particularly by M+30, increase previous goals by about 45 percent. This has enormous implications on the CONUS base structure, the production base, and the Selective Service System and the affected planners must give these new assessments highest priority. Certain units, under full mobilization, are scheduled for early rapid deployment to Europe where their unit equipment sets are prepositioned. The early, rapid deployment of active units should leave facility space open for activated reserve units/individuals. However, capacities of some bases will be exceeded because of the initial surge of reserves reporting very early in the mobilization period. With the new projected populations, it may be expected that trainees also will begin arriving at bases earlier than previously planned, thus increasing the excessive load on bases early in the mobilization. The overlap of active and activated reserve units along with a significant trainee influx will pose a major problem at most installations.

This will require early and significant CE assistance to overcome installation deficiencies. Careful advance planning is required as well as monitoring of installation capabilities and plans in peacetime.

7. Installations/Facilities Considered.

a. The current stationing plan for full mobilization is in a state of transition as a result of planned increases in inductions. To some extent, 214 bases, including federal- and state-owned facilities, would be impacted by full mobilization. However, the current stationing plan indicates that 26 Army bases are considered primary in terms of a major influx of reservists and trainees. This number is being reviewed by Forces Command (FORSCOM) and Training and Doctrine Command (TRADOC) in light of the early expected increased training load. It appears that the total number of Army installations of all types to be used in mobilization will be 51 although a final decision has not been made. Figure 5 lists these bases showing ownership, status, and the CE district responsible for each. The CE's major problems in this area will be in facilities at federally owned, state-operated and state-owned, state-operated bases, particularly where they require garrison, including FE, support. Also, the "recapture" of state-owned facilities by the Army should be assured by the CE district concerned. However, the current stationing plan will be used for specifying population loads by time until a new complete one is developed. The Air Force (AF) plans to use its current primary CONUS bases as assembly areas for active units being deployed to Europe and does not envision any installation shortfalls in handling these units. Because the AF plans to deploy elements rapidly, it does not envision many instances where activated reservists would overlap with active units to

ARMY FULL MOBILIZATION INSTALLATIONS

Installation	MACOM	Location	Responsible CE District
<u>Active Posts</u>			
Aberdeen PG	DARCOM	Aberdeen, MD	Baltimore
Ft Belvoir	TRADOC	Alexandria, VA	Baltimore
Ft Benning	TRADOC	Columbia, GA	Savannah
Ft Bliss	TRADOC	El Paso, TX	Ft Worth
Ft Bragg	FORSCOM	Fayetteville, NC	Savannah
Ft Campbell	FORSCOM	Hopkinsville, KY	Mobile
Ft Carson	FORSCOM	Colorado Springs, CO	Omaha
Ft Devens	FORSCOM	Ayer, MA	New York
Ft Dix	TRADOC	Wrightstown, NJ	New York
Ft Eustis	TRADOC	Newport News, VA	Norfolk
Fitzsimmons AMC	HSC	Denver, CO	Omaha
Ft Harrison	TRADOC	Indianapolis, IN	Omaha
Ft Hood	FORSCOM	Killeen, TX	Ft Worth
Ft Huachuca	USACC	Sierra Vista, AZ	Sacramento
Ft Hunter Liggett	FORSCOM	Monterey, CA	Sacramento
Ft Jackson	TRADOC	Columbia, SC	Savannah
Ft Knox	TRADOC	Muldrough, KY	Baltimore
Ft Lee	TRADOC	Petersburg, VA	Norfolk
Ft Leonard Wood	TRADOC	Waynesville, MO	Omaha
Ft Lewis	FORSCOM	Tacoma, WN	Sacramento
Ft McClellan	TRADOC	Anniston, AL	Mobile
Ft Meade	FORSCOM	Baltimore, MD	Baltimore
Ft Monmouth	DARCOM	Red Bank, NJ	New York
Ft Ord	FORSCOM	Monterey, CA	Sacramento
Ft Polk	FORSCOM	Leesville, LA	Ft Worth
Presidio of S.F.	FORSCOM	San Francisco, CA	Sacramento
Redstone Arsenal	DARCOM	Huntsville, AL	Mobile
Ft Riley	FORSCOM	Junction City, KA	Kansas City
Ft Rucker	TRADOC	Daleville, AL	Mobile
Ft Sam Houston	FORSCOM	San Antonio, TX	Ft Worth
Ft Sheridan	FORSCOM	Evanston, IL	Omaha
Ft Sill	TRADOC	Lawton, OK	Ft Worth
Ft Stewart/Hunter	FORSCOM	Hinesville, GA	Savannah
Ft Story	TRADOC	Virginia Beach, VA	Norfolk
Tobyhanna AD	DARCOM	Tobyhanna, PA	Baltimore

(Figure 5 Continued on Next Page)

ARMY FULL MOBILIZATION INSTALLATIONS--Continued

<u>Installation</u>	<u>MACOM</u>	<u>Location</u>	<u>Responsible CE District</u>
<u>Semi-active Posts</u>			
Ft Chaffee	TRADOC	Ft Smith, AK	Ft Worth
Ft Drum	FORSCOM	Ft Drum, NY	New York
Ft A.P. Hill	TRADOC	Bowling Green, VA	Norfolk
Ft Indiantown Gap	FORSCOM	Lebanon, PA	Baltimore
Ft McCoy ^{a/}	FORSCOM	Sparta, WI	Omaha
Camp Pickett	TRADOC	Blackstone, VA	Norfolk
<u>State-operated Posts</u>			
Camp Atterbury ^{a/}	TRADOC	Edinburg, IN	Omaha
Camp Blanding ^{a/}	FORSCOM	Jacksonville, FL	Mobile
Camp Roberts	FORSCOM	San Miguel, CA	Sacramento
Ft Irwin	FORSCOM	Barstow, CA	Sacramento
<u>State-owned Posts</u>			
Camp Edwards ^{a/}	--	Falmouth, MA	New York
Gowen Field	--	Boise, ID	Sacramento
Camp Grayling	--	Crawford MI	Omaha
Camp Ripley ^{a/}	--	Little Falls, MN	Omaha
Camp Shelby	--	Hattiesburg, MS	Mobile

^{a/} Garrison element required at full activation.

Figure 5

overload installations capabilities. In the event that an overlap might occur, reservists could be activated at a commercial or state-owned facility near the reservists' home site. In many cases, reserve units now use such alternate facilities during training. AF policy specifies that no units designated for deployment overseas are anticipated to remain on station in CONUS more than 15 days after activation. This policy, along with early active unit deployment, should minimize chances of overcrowding. However, there is the possibility that the CE would be called on to assist the AF in securing rental property adjacent to some installations to overcome a temporary housing shortage. Renting commercial facilities rather than building temporary housing on installations is the AF policy for overcoming any housing shortage.

b. There must be adequate transportation routes to maintain a smooth flow of materiel and men to deployment locations in the full mobilization period. A Military Traffic Management Command (MTMC) study on rail lines in the US indicates that there are adequate rail lines servicing the primary military installations and ports of embarkation (POEs) to meet full mobilization requirements. The same is true for rail lines servicing most of the production base. However, recent surveys of ammunition plants indicate that rail spurs and sidings servicing these facilities are, in some cases, inadequate and would require rehabilitation and/or expansion. Such actions, if not possible before mobilization, would have to be taken immediately on declaration of mobilization and could require considerable CE support. Another MTMC study^{6/} of 16 primary POEs indicates that these ports could handle the

6/ DA, USAMTMC, An Analysis of Ports for National Defense of US Army Unit Deployments. (UNCLASSIFIED).

expected military movements through them without problems except at one port where it would need additional cargo handling equipment. However, this study may be deceptive since current on-going dredging operations at some ports would have to continue and at other ports increased dredging might have to be undertaken to develop alongside depths, channel widening, and turning basins to meet increased shipping requirements. Also, the last Nifty Nugget (mobilization exercise in 1978) indicated there could be problems at some ports in accommodating ammunition shipments. Separate piers and facilities are needed for ammunition to ensure safety, and such facilities may be difficult to obtain without real estate acquisition and/or new pier construction; both functions require CE assistance.

c. A third area that needs to be reviewed in terms of mobilization adequacy is the industrial production base to support the military. Initially, the Army Materiel Development and Readiness Command (DARCOM) did not foresee any major surge in materiel requirements that could not be met with the existing production base structure. However, this position is being reevaluated in light of the newly projected heavier influx of trainees. Again, ammunition plants may be facilities needing quick enhancement and expansion which would require CE support. Additionally, a survey of Navy ammunition plants recently acquired by the Army reveals that these latter plants apparently need considerable rehabilitation. Also, there may well be large maintenance and rehabilitation efforts connected with other government-owned production facilities coming out of mothballs and going into full-scale production. The amount of this effort has not been quantified at this time. The entire production base structure requires thorough review to establish the

needs for expansion, bringing cold lines to hot-line status, and assessing CE support in these activities.

8. Impact on CE. Initial study results arising from action-planning conferences with the Baltimore, Fort Worth, and Vicksburg Districts indicate that significant mission and functions shifts will occur during mobilization. Figure 6 shows qualitatively these workload shifts. Mobilization TDAs must recognize these shifts. Additionally, requirement assessments for various installations and facilities during mobilization indicate that there are potential major shortfalls, particularly early in the mobilization period. These shortfalls come in such areas as adequacy of some military bases to accommodate incoming reservists and trainees, possible rail system and port inadequacies, and production base limitations. Specific shortfalls will be identified insofar as possible in a later report. However, the CE must be prepared to take on the tasks of ensuring installations and facilities are quickly upgraded to accommodate the planned active force expansion. The personnel to undertake these actions would have to be diverted from other CE efforts since such actions must generally be done within the first 10 to 30 days after M-day and at a time when the CE is losing officer personnel to Europe. Additionally, there will be a major CE support role in direct base operations support and in direct support of Facility Engineer (FE) managers. This increased workload also will most likely have to come from CW, implying a further drawdown of CW personnel and diversion of people into other than their primary roles. Division and district planners need to be certain that their mobilization plans account for such manpower shifts. Also, some peacetime training of personnel may have to be undertaken to permit individuals to

PEACETIME → MOBILIZATION MISSION AND FUNCTION SHIFTS

	Civil Works	Military Construction
New		<ul style="list-style-type: none"> .Security of Critical Facilities
Increase (Greatly)	<ul style="list-style-type: none"> .Construction Contract Termination 	<ul style="list-style-type: none"> .Facility Engineer Support .Communications .Production Base Support .Leasing and Acquisition .Expedient Construction .Procurement .Work Force at Area Offices .Acceleration of Essential Construction .Intra-Corps, Inter-government Coordination .Site-specific Support
Decrease (Greatly)	<ul style="list-style-type: none"> .Water Resource Planning .Design .Nonessential Construction .Recreation .Regulatory Functions .Maintenance on Noncritical Facilities 	<ul style="list-style-type: none"> .Nonessential Construction .Master Planning



Figure 6

develop a secondary job experience that will enable them to make a wartime shift of function. While some of these base operations and FE functions may be absorbed by activated MOBDES personnel, there still may be a need for CW personnel to shift to those functions from primary duties.

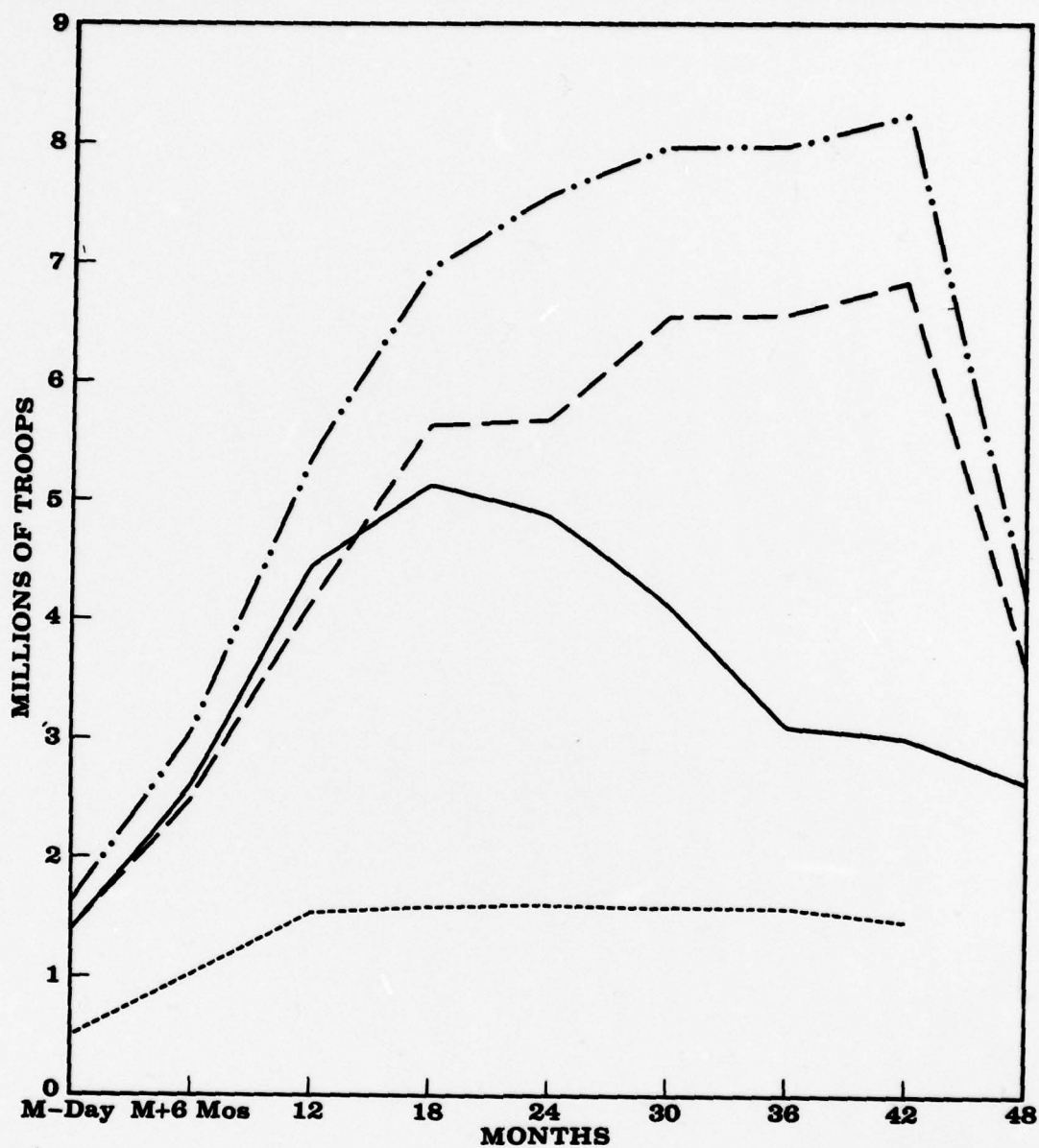
III. TOTAL MOBILIZATION (CONVENTIONAL)

9. The Mobilization Process.

a. Total mobilization by definition requires the commitment of the full range of national resources to the defense effort, including a drastic increase in the military forces. Planning for total mobilization (conventional) is, at best, embryonic at all levels since it is not expected to be declared until after a state of full mobilization has been in effect for some time. Consequently, for CE planning purposes, full mobilization would be in effect from M-day to M+30 at which time total mobilization is assumed to be declared.

b. The force buildup for total mobilization is not well detailed in the limited planning done to date. Estimates of how fast new units could be formed, equipped, trained, and deployed vary--in part, depending on the types of units to be deployed. However, rough estimates indicate that an Army force of about 6 million probably could be fielded in 4 years after declaring total mobilization, with the first new armored unit (if that were the type unit developed) ready for deployment in about 2 years. The uncertainties in this lie partly in the fact that the US has not undergone a total mobilization for over 35 years (since World War II). At that time the US mobilized an Army (including Air Corps) of 8.3 million in 3.5 years, starting in December 1941 with a force of about 1.7 million. Figure 7 shows the progression of that mobilization as compared with the buildup during the Korean Conflict (a full mobilization). In the creation of additional Army divisions, the US went from a base of 36 divisions in December 1941 to 91 divisions in August 1943.

ARMY STRENGTH -- WORLD WAR II & KOREAN CONFLICT ^{a/}



^{a/} For WW II, beginning is 1 Dec 1941.

LEGEND

- · — · — TOTAL ARMY (WW II) INCL AIR CORPS
- - - TOTAL ARMY (WW II) WITHOUT AIR CORPS
- — — ARMY CONUS STRENGTH (WW II)
- · · · · TOTAL ARMY (Korean War) (Full mobilization beginning 30 Jun 50)

Figure 7

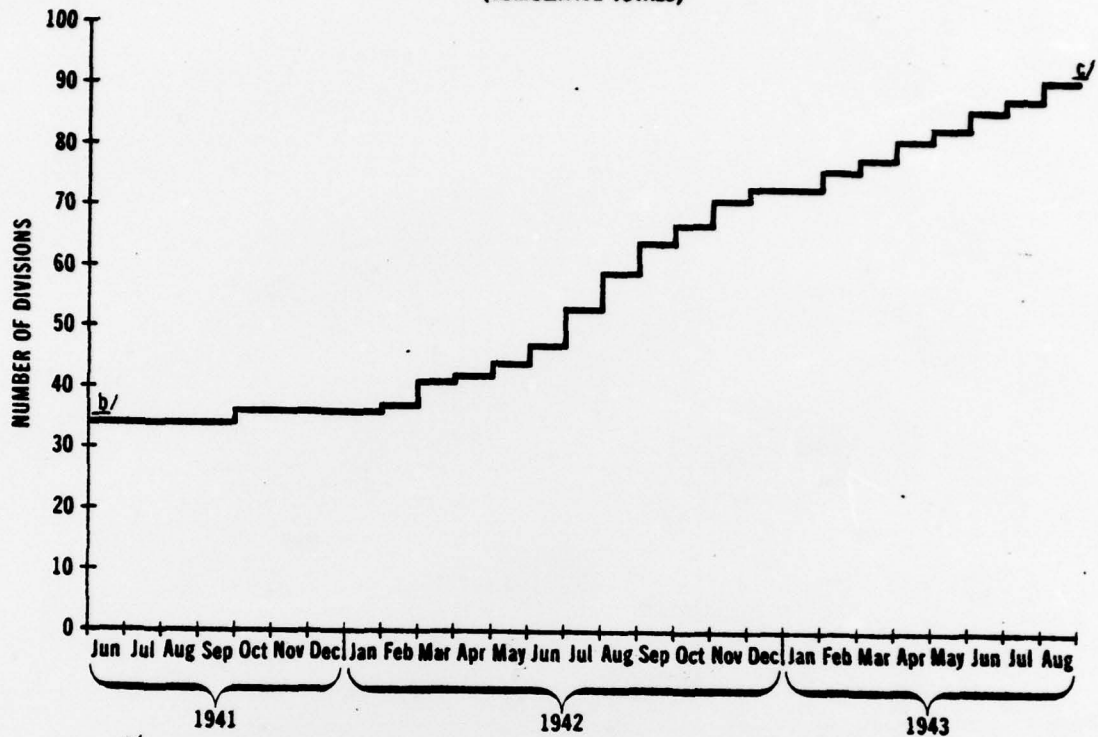
Figure 8 shows the progression of division mobilization between June 1941 and August 1943. A slower estimated buildup today of Army forces is predicated, in part, on a smaller initial base to build on, more sophisticated weaponry, heavier (in firepower) units, a smaller CONUS base structure, and a non-operational Selective Service System. In fact, in World War II, mobilization could be assumed to have been in effect for about 9 months or more prior to the outbreak of war.

c. Best estimates today on what a total mobilization curve would look like indicate a duplication of the full mobilization curve for at least 180 days (i.e., an initial peaking of forces within the first 30 days as reservists are activated and deployed and the first inductees arrive at training bases). After that period, there is a general decline of personnel at CONUS bases. There is no significant increase until about M+600. While inductees are coming into the system, most of them are being trained for existing units as fillers and replacements. This minimizes the load on the CONUS base structure since most trained personnel are sent to deployed units as soon as training is completed.

10. Facilities/Installations Considered.

a. The military bases used in total mobilization (conventional) would be essentially the same as those used for full mobilization in the expanded stationing estimates. This implies the same CE workload in the early stage of total mobilization as in full mobilization (i.e., a need for an immediate response at some bases to improve facilities to accommodate a significant influx of personnel). Once the initial personnel peak load is provided for, a more deliberate approach to base expansion should be possible

US ARMY DIVISIONS MOBILIZED JUNE 1941 - AUGUST 1943 ^{a/}
(CUMULATIVE TOTALS)



^{a/} Source : Department of the Army, Office of the Chief of Military History, The Procurement and Training of Ground Combat Troops, the Army Ground Forces, United States Army in World War II. Washington, D.C., 1948 (UNCLASSIFIED).

^{b/} Mobilized prior to June 1941.

^{c/} Last division mobilized August 1943.

Figure 8

since the second peak loading does not occur for about 2 years after the first. During that interim period, facilities at those bases where new units are being formed and unit-type training is being conducted can be improved and enlarged to accommodate preplanned requirements. Such base enhancements probably would include training area enlargement, requiring additional real estate acquisitions by the CE.

b. Transportation facilities to support total mobilization appear similar to those for full mobilization for the first 180 days. However, in addition to enhancement of rail spurs and sidings at ammunition plants, there is a question as to whether rail facilities connecting primary military installations to main lines are adequate to accommodate the buildup of personnel and new units after about M+400. Existing spur lines to these installations may have to be improved to accommodate the buildup and its accompanying heavy increase in traffic. In some cases, additional spur lines may have to be built. The same situation relative to ports would apply as is the case for full mobilization. Additionally, there could be the need to develop even more ammunition handling facilities and piers at POEs.

c. The industrial production base appears to be the primary constraint on a rapid force buildup in total mobilization. Estimates on bringing portions of the production base up to a productivity level to support total mobilization range up to 3 years or more for such major items as new Navy combat ships. For the Army, it is estimated that armored vehicle production will be a primary constraint in fielding additional heavy units because it will be unable to exceed the needs for replacements to the extent of forming and deploying a new heavy division before about M+730. Overall Army policy is

to try to achieve even greater responsiveness than during World War II. However, best estimates are that such a responsiveness is not yet available. Clearly, then, there is a need to expedite industrial production base expansion in which the CE would have a major role.

11. Impact on CE. Total mobilization's (conventional) impact on the CE initially will be the same as for full mobilization (see Figure 6). However, the CE should be in a posture to respond to crash requirements which typically occur when the expediency of war philosophy replaces the austerity outlook of peacetime. Also, over time there will be a more pronounced workload to increase base and transport facility capability. Not only will the workload be heavier, but it will have to be programmed over a protracted time period. This increased workload will decrease the amount of effort the CE can devote to peacetime activities, and CE planners will have to determine which activities/projects to discontinue or put in abeyance to meet mobilization requirements. As a conventional war moves toward a nuclear threshold, increased emphasis will be placed on CD.

IV. TOTAL MOBILIZATION (NUCLEAR)

12. Mobilization Conditions.

a. The conditions of total mobilization (nuclear) obviously are far different from those of the previous mobilizations discussed, since the nuclear condition envisions a nuclear attack on CONUS with little or no warning. Initially, the CE response would most probably be in support of CD and national survival in general rather than in direct support of military mobilization. Assuming a limited warning time of approximately 1 to 2 weeks, there would be no time to mobilize the military in any sense that would require CE support. However, even such a limited warning period would provide an opportunity to provide some population evacuation from high-risk areas. Also, key military personnel could be evacuated from potential target areas to preselected emergency operations centers, and some forces might be dispersed to minimize casualties. Such dispersion could be undertaken from some CE personnel located within high-risk areas. The CE COOP^{7/} for CE divisions and districts designates emergency relocation sites. Alternate division and district headquarters designated in the COOP can also be used to take over operational control should the original headquarters cease to function. With no warning whatsoever, the CE response would have to come in the immediate aftermath of the attack. This could involve assisting in evacuating people from potentially high fallout areas and assisting in lifesaving efforts in the immediate target areas. Thus, CE planning must be sufficiently flexible and encompassing to account for either the limited or the no-warning scenarios.

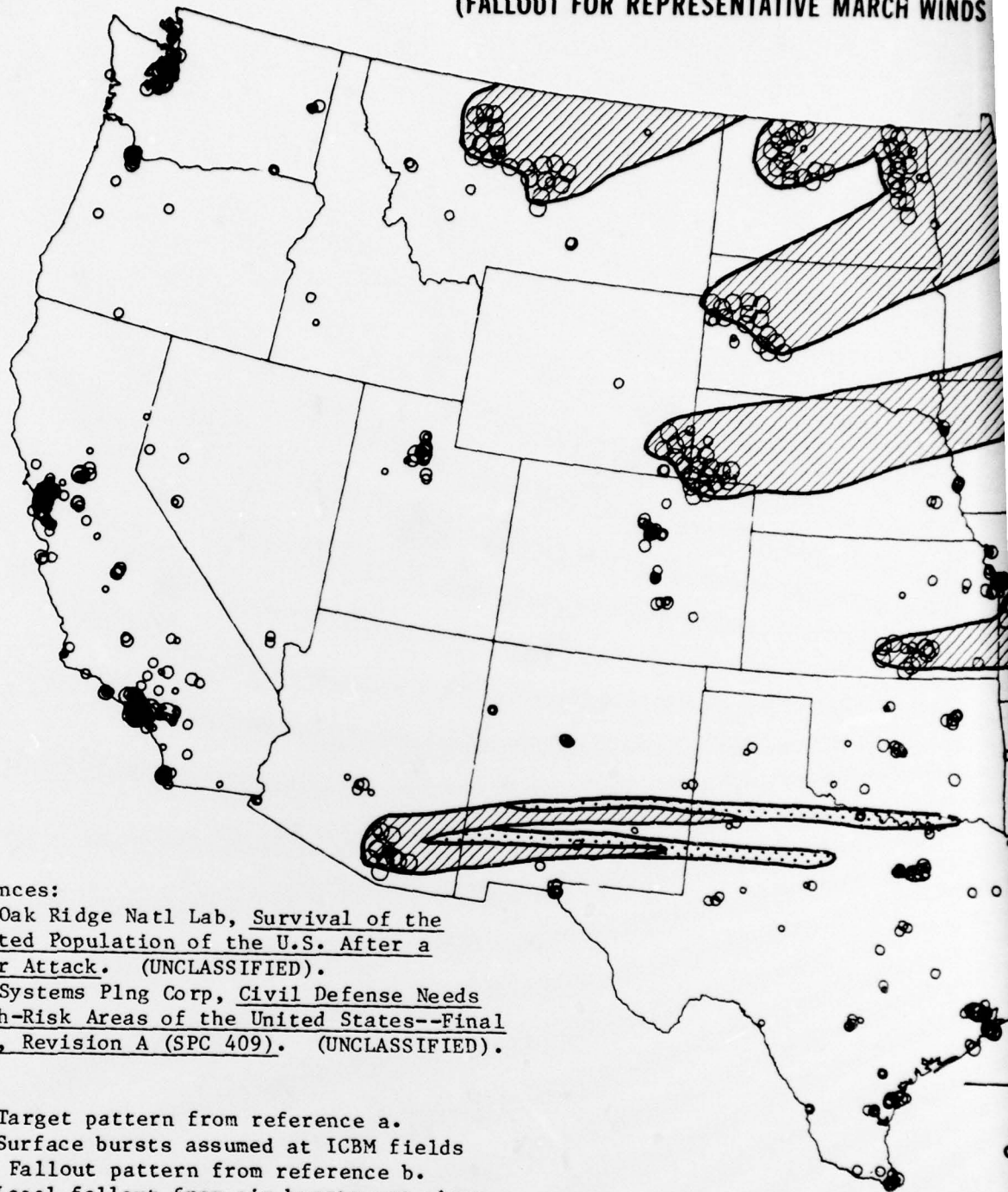
^{7/} DA, OCE, Continuity of Operations Plan (COOP) (U). (CONFIDENTIAL).

b. The nature of the attack itself is key to determining the impact on the nation and the CE of a nuclear attack. For this study, the attack pattern and intensity selected for planning purposes is one used by FEMA in its CD planning. The attack targets key military installations, military supporting facilities, other basic industries and facilities, and major population centers, and is considered a large-scale attack pattern. Figure 9 shows the attack pattern and a fallout pattern for representative March winds. As can be seen from the pattern for this attack, the impact on major population centers and consequently CE headquarters could be devastating if there is no advance warning or opportunity to evacuate the target area. Certain area offices and operational facilities probably would survive, but overall CE losses could be severe.

13. CE Response.

a. CE involvement in CD prior to and following a nuclear attack is mandated by Army and Engineer regulations. Primary planning for meeting such a contingency in the civil sector is the responsibility of local officials in conjunction with FEMA. However, Army area commanders also work with state and FEMA officials in developing plans, and division engineers are responsible for coordination and liaison with Army commanders and cooperating federal and state organizations. Further, the CE must, through the COOP, establish procedures for keeping vital services functioning after a nuclear attack. While CD planning has not been stressed for the past several years, the recent creation of FEMA through consolidation of several agencies involved in CE planning shows signs of new stimuli and a probable revival of emphasis. CE planners, especially at division level, probably will become increasingly involved in renewed efforts to bring CD planning up to date.

TARGET PATTERN FOR D
(FALLOUT FOR REPRESENTATIVE MARCH WINDS)



References:

- a. Oak Ridge Natl Lab, Survival of the Relocated Population of the U.S. After a Nuclear Attack. (UNCLASSIFIED).
- b. Systems Plng Corp, Civil Defense Needs of High-Risk Areas of the United States--Final Report, Revision A (SPC 409). (UNCLASSIFIED).

Notes:

1. Target pattern from reference a.
2. Surface bursts assumed at ICBM fields only. Fallout pattern from reference b.
3. Local fallout from air bursts not shown.
4. CRP (Crisis Relocation Planning) attack used here to illustrate possible target locations (almost identical to DCPA TR-82 attack).
5. Circle sizes indicate extent of a specific overpressure for the depicted attack. Refer to DOD, DCPA, High Risk Areas: DCPA Technical Report 82 (UNCLASSIFIED) for precise delineation of affected areas.

FOR DCPA CRP-2B ATTACK
(WINDS FROM SURFACE BURSTS ON ICBM FIELDS)



LEGEND

○ Target (see Note 5,

Fallout pattern where maximum
total exposure is 1,000
Roentgens (R)



Fallout pattern where maximum
total exposure is between 500 R
and 1,000 R



Figure 9

b. The CE presently is involved with the Resident Engineer Support Groups which, among their several functions, identify and evaluate the best available shelter protection in existing facilities. Another area of CE involvement is in cooperation with local governments for mutual support in providing fallout shelters. CD authorities responsible for public shelter use plans should be made aware of requirements for CE employees, dependents, and visitors. District engineers are encouraged to make usable space under their control available to local authorities.

c. A major effort in CD current planning is the selection, survey, and evaluation of sites for relocating people away from primary target areas. The crisis relocation program, as promulgated by a Presidential Decision in September 1978, would be implemented in an effort to reduce casualties assuming there is a reasonable warning period. Much of the planning effort now being undertaken at state and local levels is in locating potential host areas to receive evacuees. This appears to be an area in which the CE should become actively involved. CE-controlled facilities such as recreational areas could possibly serve as host areas, since some control personnel are already at such facilities. Also, some Army installations could possibly serve as host areas for evacuated populations.

d. Another potential area of CE support in planning could be development of construction contractor resource inventories in each CE district. The CE probably has more detailed and comprehensive knowledge of construction contractors than any other government agency. Previous memorandums of understanding between past COEs and heads of earlier CD agencies have recognized this CE knowledge and have called for CE-maintained inventories of such

resources. Both in pre- and post-attack environments, the employment of construction resources would be essential to enhance population survival.

e. In a post-attack situation, the initial efforts of all government agencies would be to ensure maximum population survival. Residual CE capability would be responsible for implementing provisions of the Engineer COOP, particularly those provisions for maintaining vital services and installations. Beyond that, CE capability could be employed in the direction and management of available construction resources to enhance population survival. Specific tasks probably would be designated and prioritized by the FEMA regional official, probably in conjunction with local officials, but the CE should be prepared to respond to such authority. After the initial lifesaving period, CE resources in some areas could be diverted from assisting the civil population to restoring damaged military installations and mobilizing the military. At this point, there probably would be competition between the civil sector and the military for construction resources. Some control system for allocating these resources on a priority basis will eventually be developed, and this will require planning and coordination among FEMA, CE field elements, and local officials. It is envisioned that FEMA officials will take responsibility for these planning activities.

V. SUMMARY

14. The Mobilization Range. CE planners at all levels must be prepared to support the Army and the nation in a range of emergency conditions. CE documents must firmly reflect the requirements for CE support to the military and the nation and CE response capability within this range of conditions. ER 500-1-1^{8/} describes missions and responsibilities for natural disasters. ER 500-2-1^{9/} describes national emergency procedures particularly in event of a nuclear attack. The intermediate level of emergency, a national defense mobilization, has not been properly thought through or reflected in CE documents; full mobilization is a key base-line scenario on which to predicate internal planning. However, CE efforts could range from improving the military base structure to emergency survival measures. The CE must have adequate, on-the-shelf plans at all levels ready for immediate implementation. Descriptions of the mobilization environments and scoping of tasks to be done contained in this monograph provide a background against which CE planners can focus their efforts when developing those integrated plans.

^{8/} DA, OCE, ER 500-1-1, Natural Disaster Procedures. (UNCLASSIFIED).

^{9/} DA, OCE, ER 500-2-1, National Emergency Procedures. (UNCLASSIFIED).

ANNEX A

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ANNEX A

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LAST PAGE OF ANNEX A